



How Total is a Total Cost of Ownership?

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Owning a car generates more costs than only individual costs



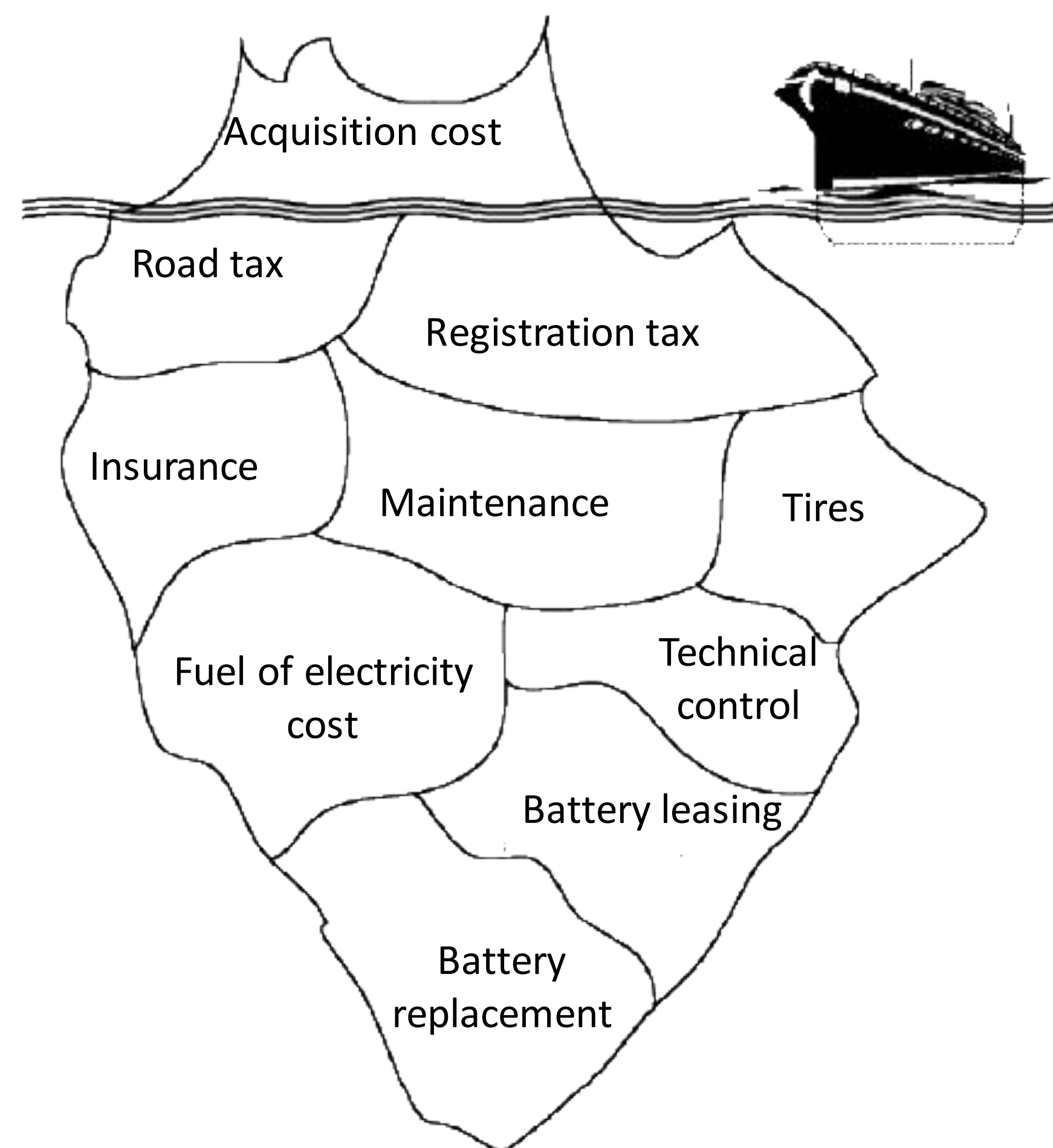
<https://commons.wikimedia.org/wiki/File:Trafficjamdelhi.jpg>



Overview

1. Total Cost of Ownership (TCO)
2. External Costs
3. TCO-based tax model
4. Total Cost for Society

Total Cost of Ownership





Total Cost of Ownership for passenger cars in Brussels

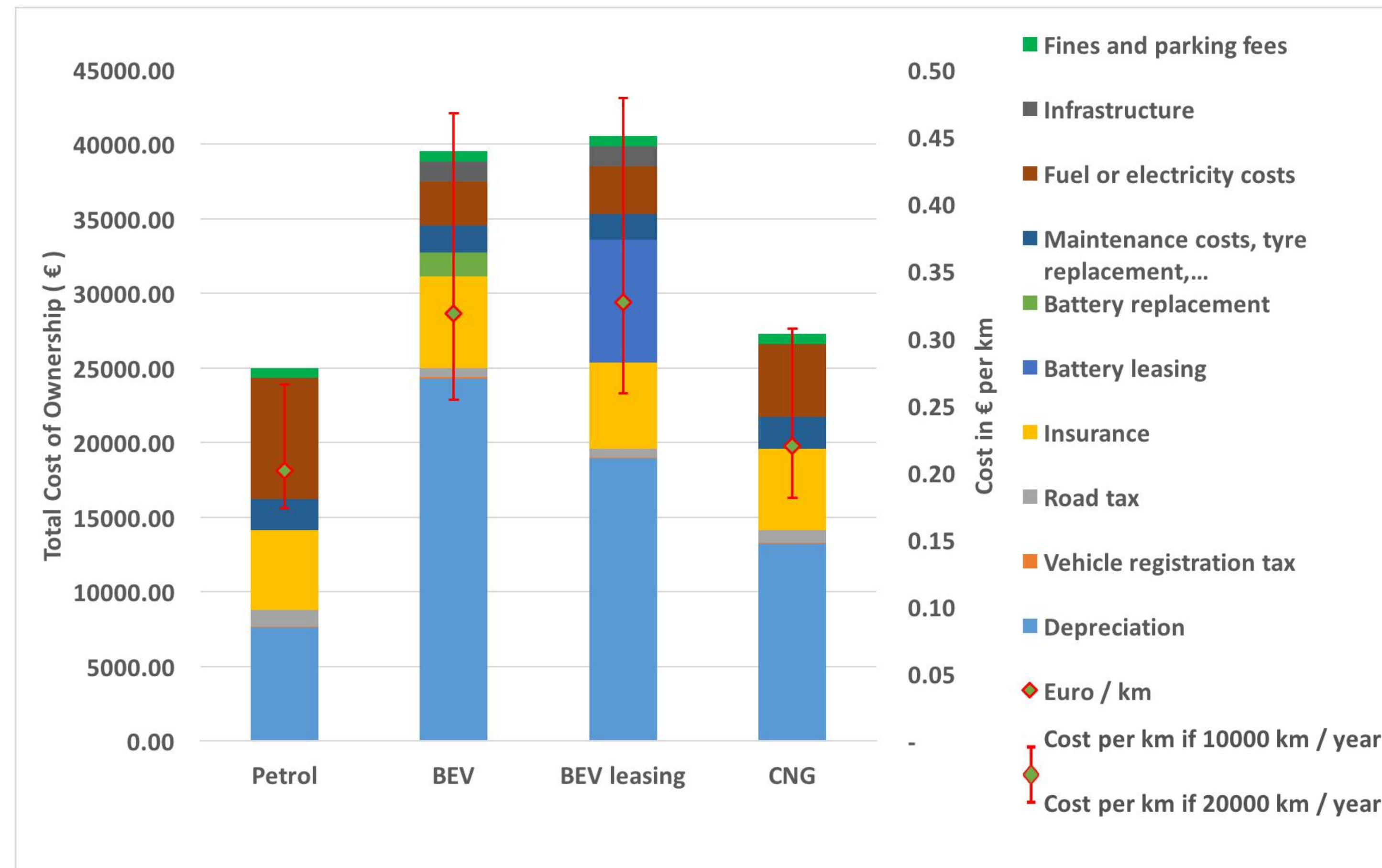
Assumptions

- 8 years and 45 days ownership
- 15.284km yearly mileage

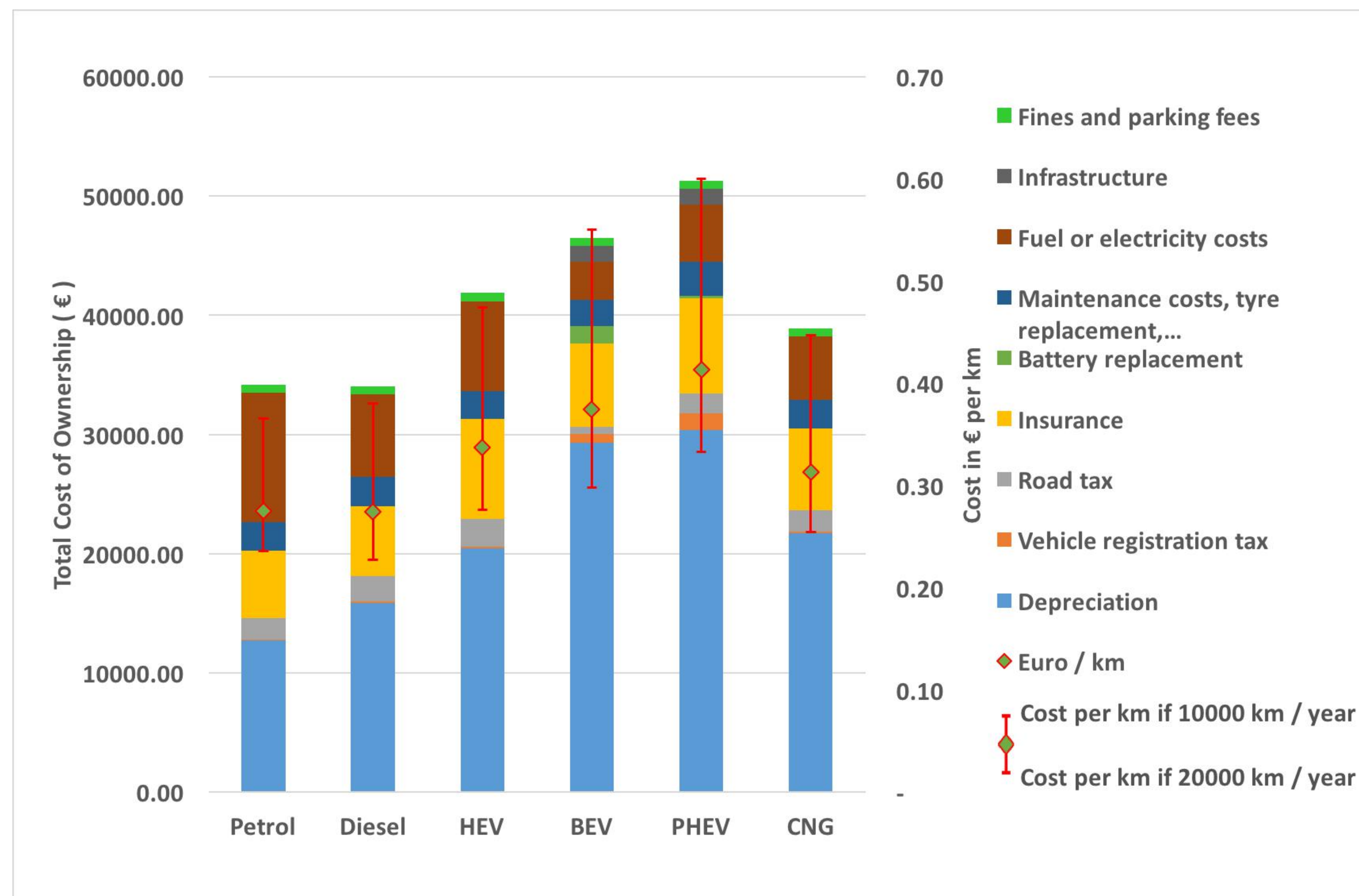
Costs

- Depreciation
- Fuel- and electricity: €1,60/l for petrol, €1,42/l for diesel, €0,18/kWh for electricity and €0,87/kg for CNG
- Taxes
- Insurance
- Battery replacement
- Maintenance
- Installation infrastructure
- Fines and parking fees

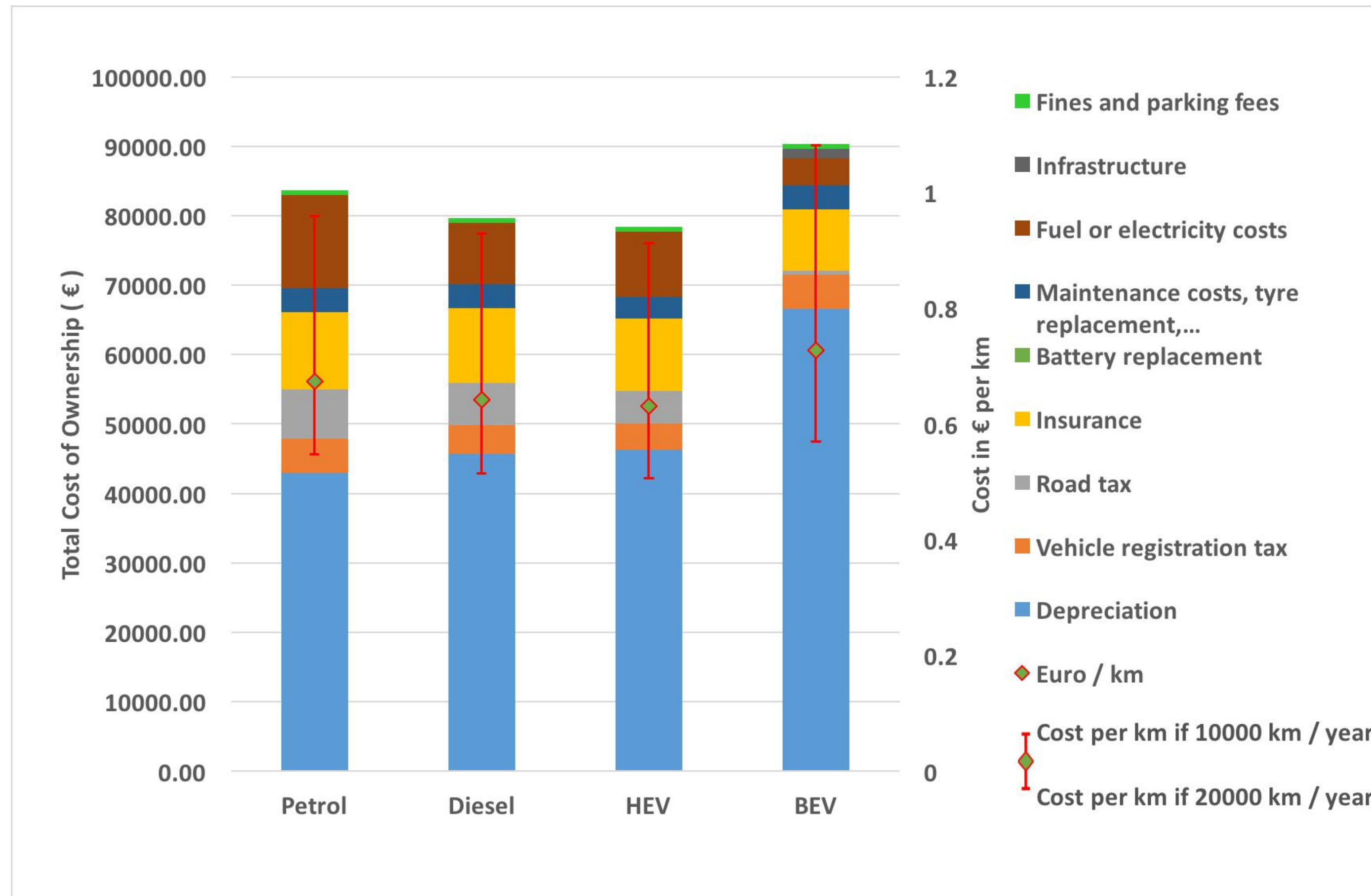
TCO for city car segment



TCO for medium car segment



TCO for premium car segment





External Costs for passenger cars in Brussels

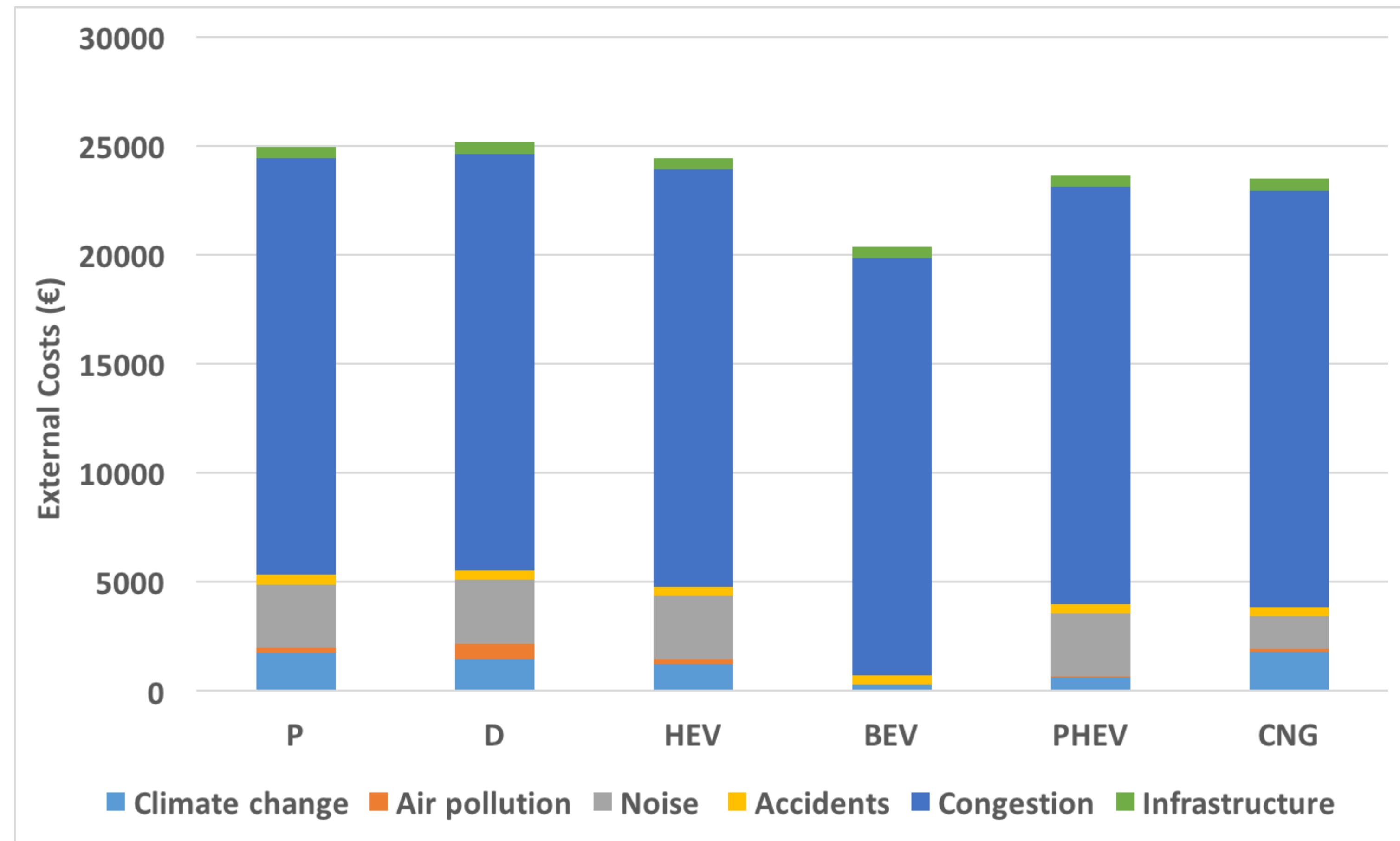
Scenario based

- Type trips (Commuting, recreative, others)
- Daytime
- Type road
- Peak/off-peak

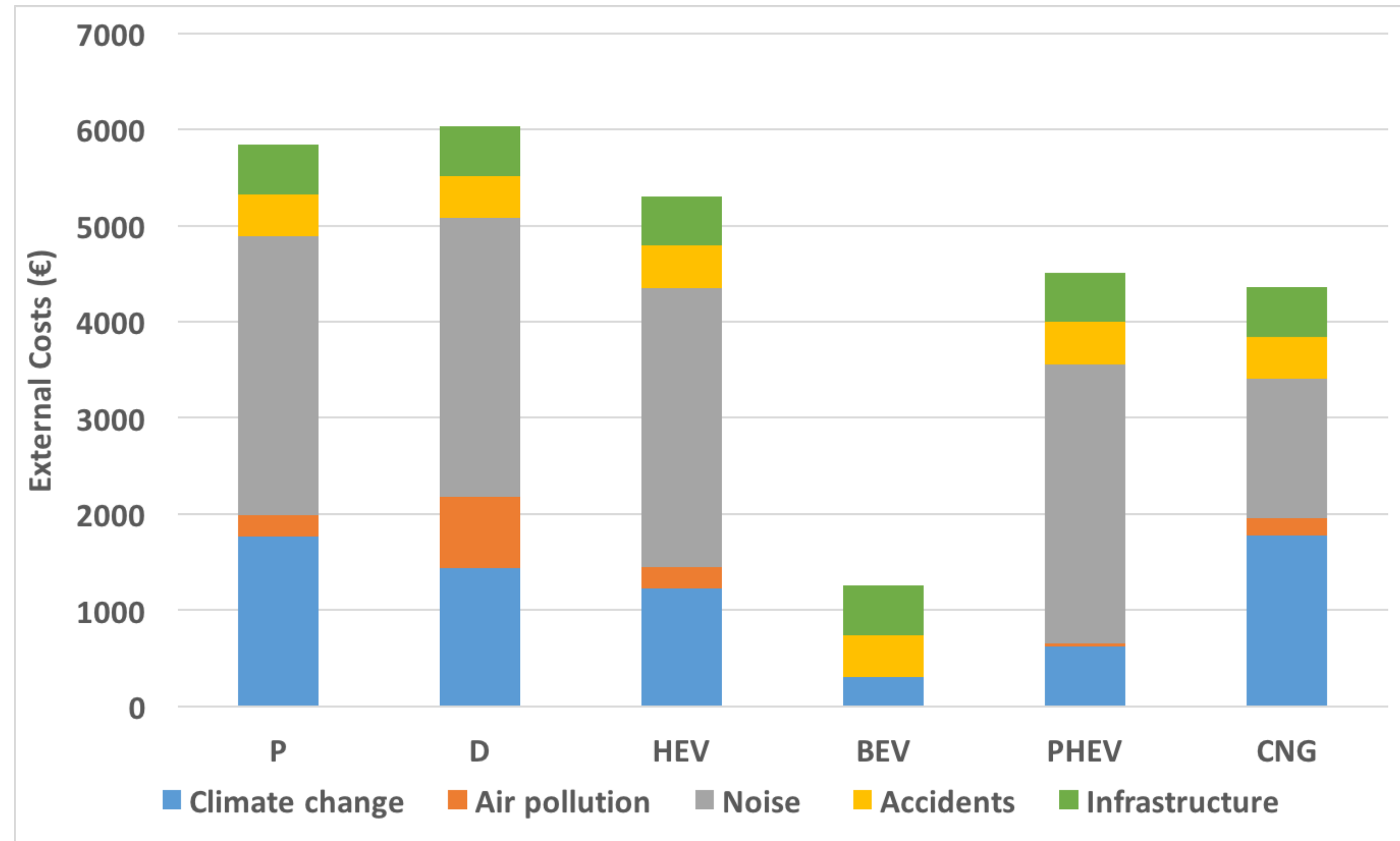
Externalities

- Climate change
- Air pollution
- Noise
- Accidents
- Congestion
- Infrastructure

External Costs including congestion



External Costs excluding congestion





TCO-based tax model

Vehicle specific taxes

- Registration tax
- Road tax
- Fines
- Parking fees

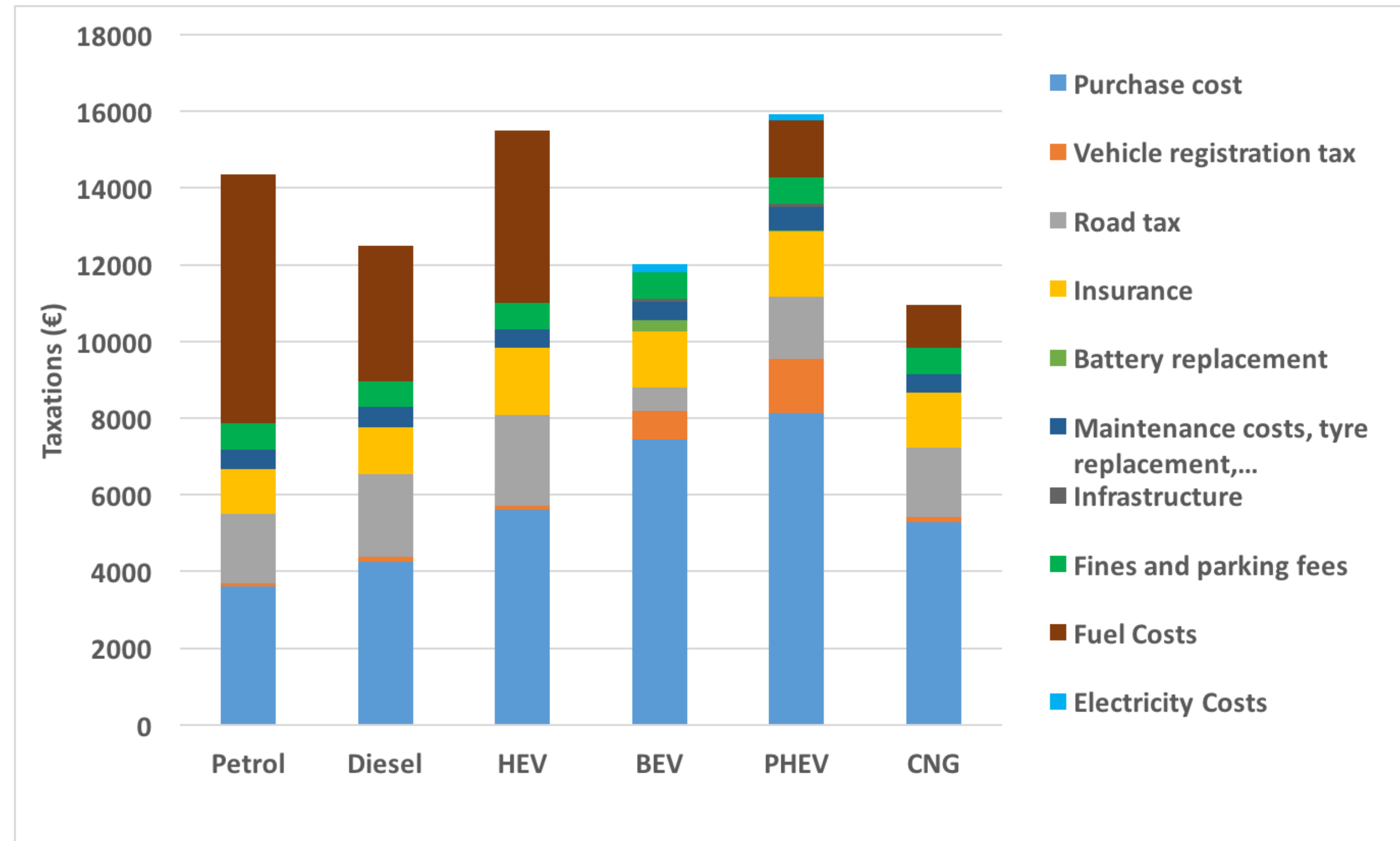
VAT

- 21% for all except for electricity and charging pole installation (6%)

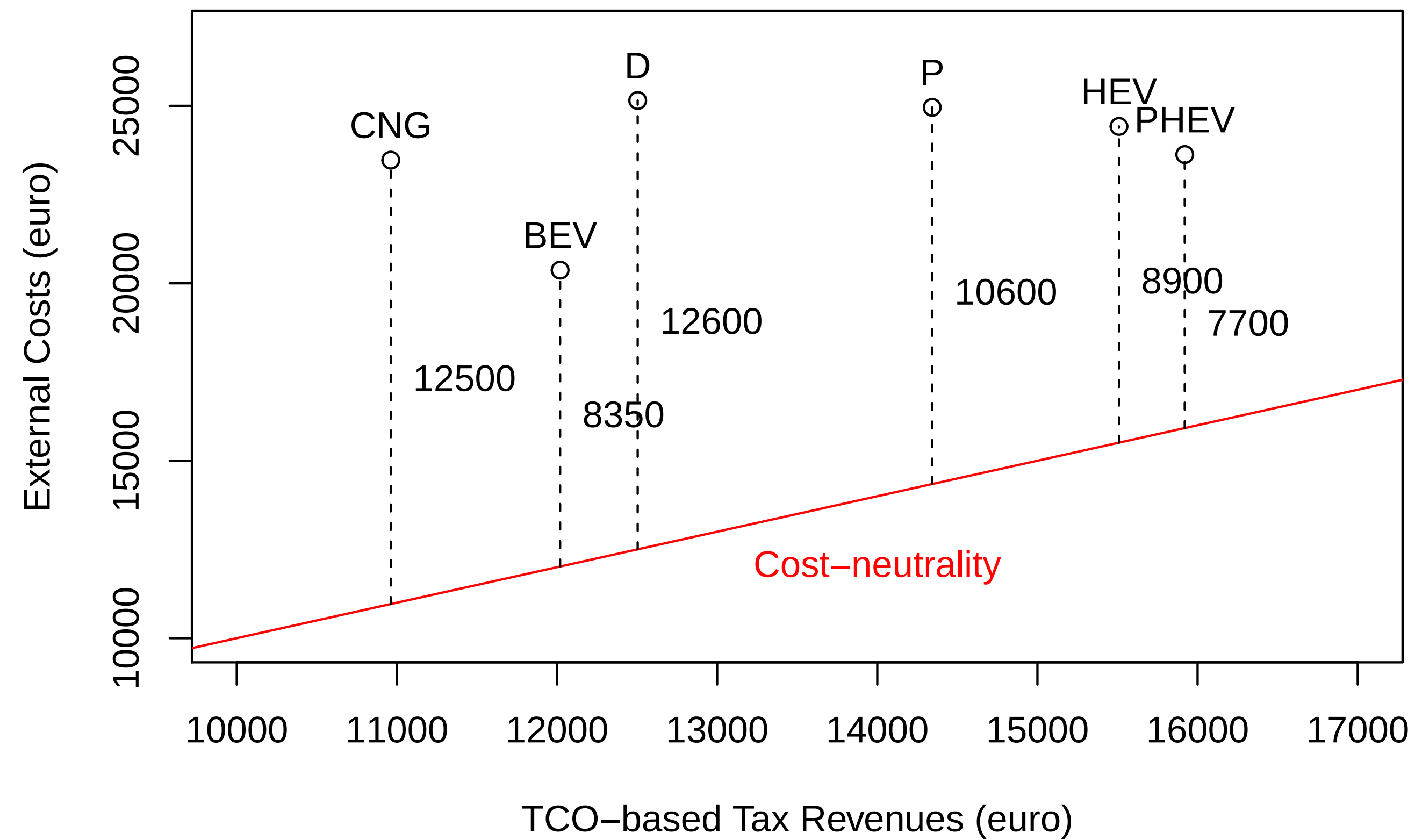
Excises, special excises and energy taxes

- Fuel
- Electricity

Tax revenues based on TCO



Total Cost for Society



Conclusion

Total Cost of Ownership

- BEV and HEV more competitive in higher vehicle segments

External Costs

- Congestion is very high in the Brussels Capital Region
- The BEV technology has the lowest external costs

Total Cost for Society

- Subtracts TCO-based tax revenues from External Costs
- Electric vehicle technologies such as PHEV, BEV and HEV have a lower TCS than petrol, diesel and CNG vehicle technologies in the medium vehicle segment



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